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Applicant: David P. Prince
U.S.S.N.: 10/734,395
Fig. 1A
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114

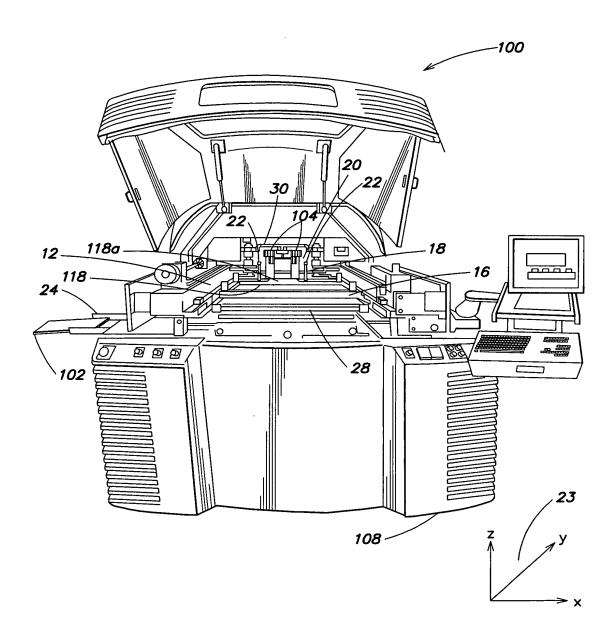


FIG. 1A

Applicant: David P. Prince
U.S.S.N.: 10/734,395
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114 Sheet 2 of 31 Fig. 1B

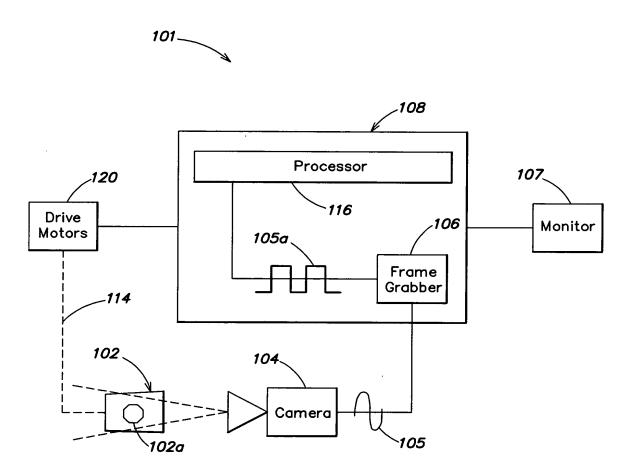


FIG. 1B

Applicant: David P. Prince
U.S. S.N.: 10/734,395
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114

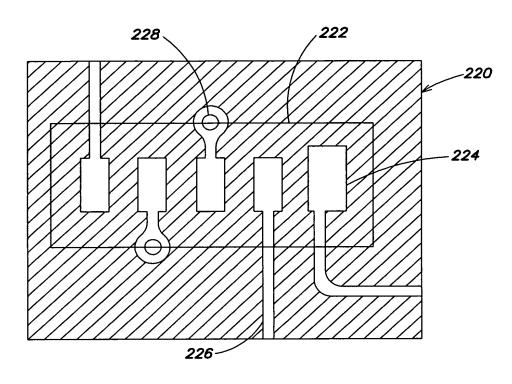


FIG. 2A

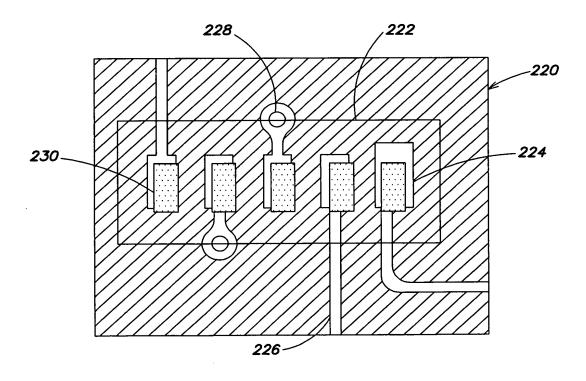


FIG. 2B

Applicant: David P. Prince
U.S.S.N.: 10/734,395
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114 Sheet 4 of 31 Fig 3

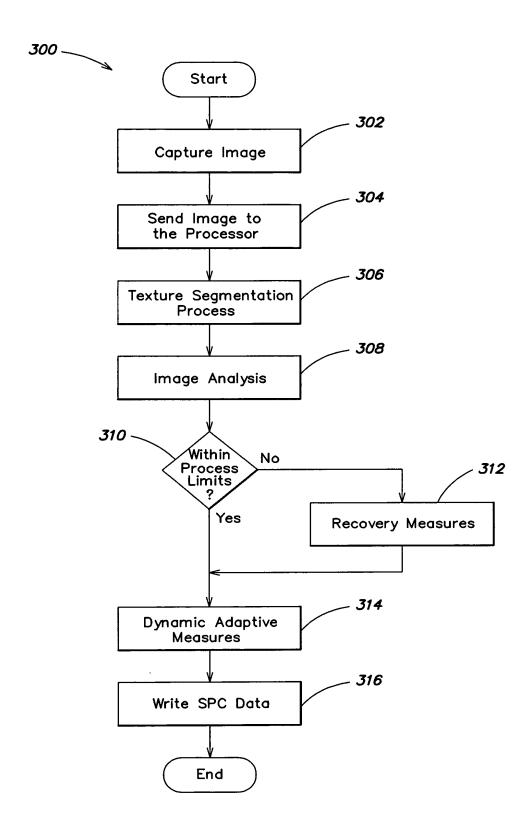


FIG. 3

Applicant: David P. Prince
U.S.S.N.: 10/734,395
Figs. 4A & 4B
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114

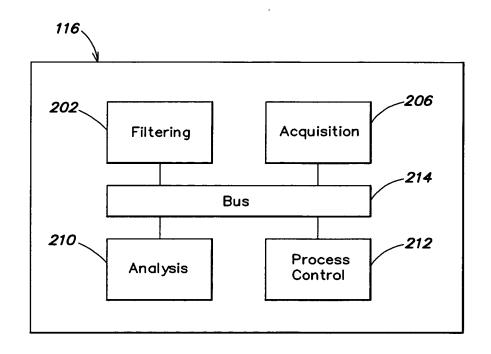


FIG. 4A

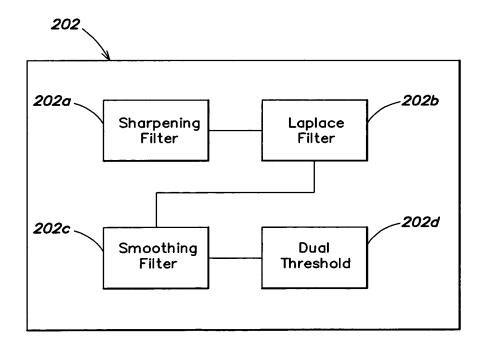


FIG. 4B

Applicant: David P. Prince
U.S.S.N.: 10/734,395
Sheet 6 of 31
Figs. 5A, 5B & 5C
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114

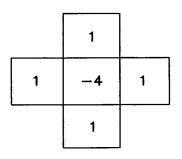


FIG. 5A

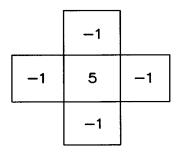


FIG. 5B

1	1	1
1	1	1
1	1	1

FIG. 5C

Applicant: David P. Prince
U.S.S.N.: 10/734,395
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114 Sheet 7 of 31 Fig. 6

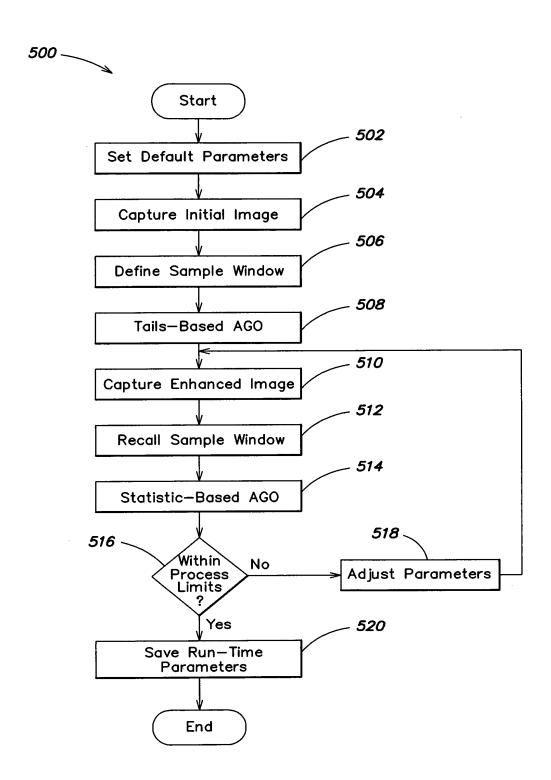


FIG. 6

Applicant: .David P. Prince
U.S.S.N.: 10/734,395
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114

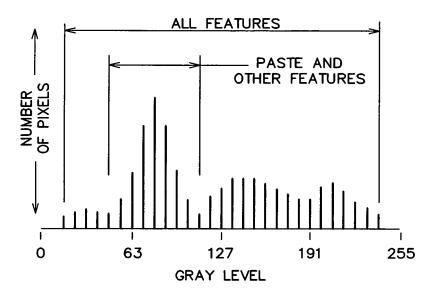


FIG. 7A

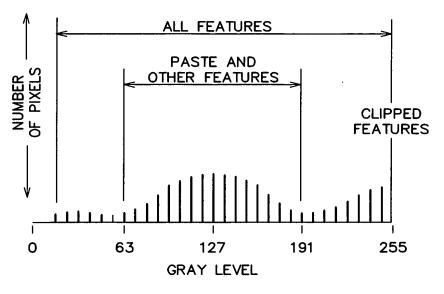
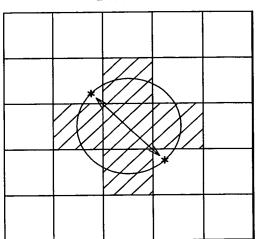


FIG. 7B

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Applicant: David P. Prince Sheet 9 of 31 U.S.S.N.: 10/734,395 Figs. 8A, 8B, 8C & 8D Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste

Ø1.3242



Ø1.8727

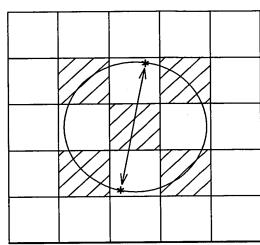
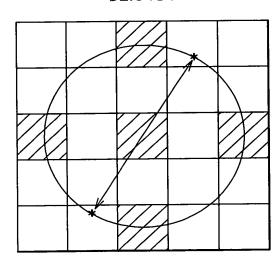


FIG. 8A

FIG. 8B

Ø2.6484



Ø3.7454

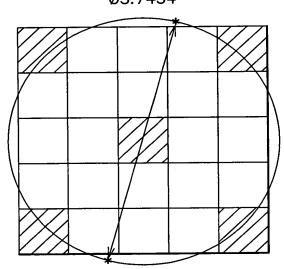
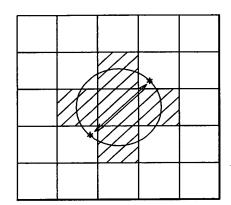


FIG. 8C

FIG. 8D

Applicant: David P. Prince
U.S.S.N.: 10/734,395
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114

Ø0.9594



Ø1.3568

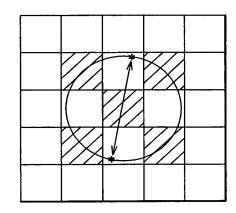
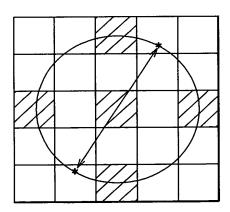


FIG. 8E

FIG. 8F

Ø1.9188



Ø2.7136

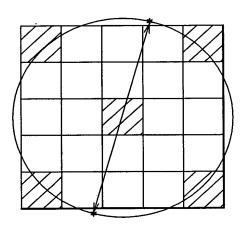
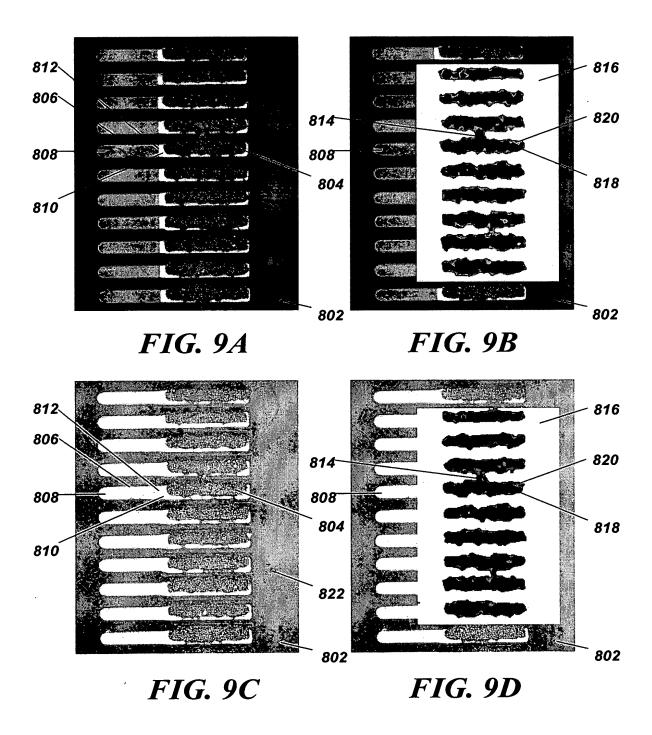


FIG. 8G

FIG. 8H

Applicant: David P. Prince
U.S.S. N.: 10/734,395
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U.S.S.N.: 10/734,395
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114

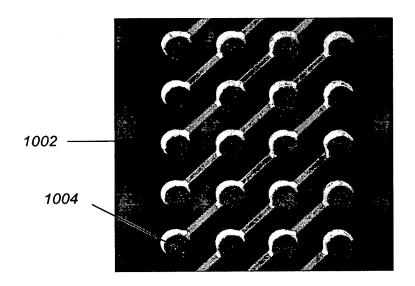


FIG. 10A

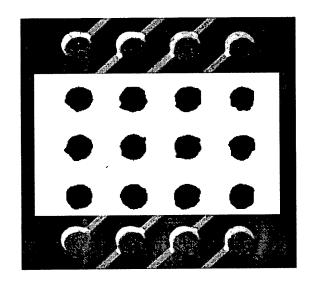


FIG. 10B

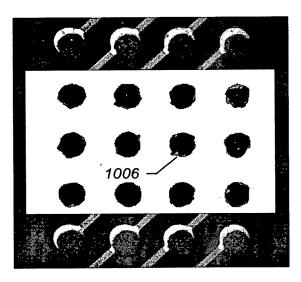


FIG. 10C

Applicant: David P. Prince
U.S.S.N.: 10/734,395
Sheet 13 of 31
Figs. 11A, 11B & 11C
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114

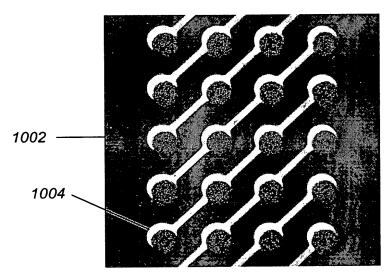


FIG. 11A

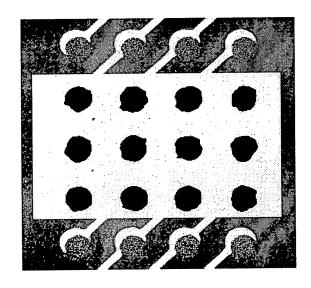


FIG. 11B

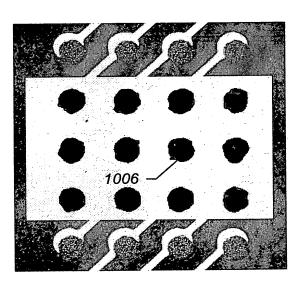


FIG. 11C

Fig. 12

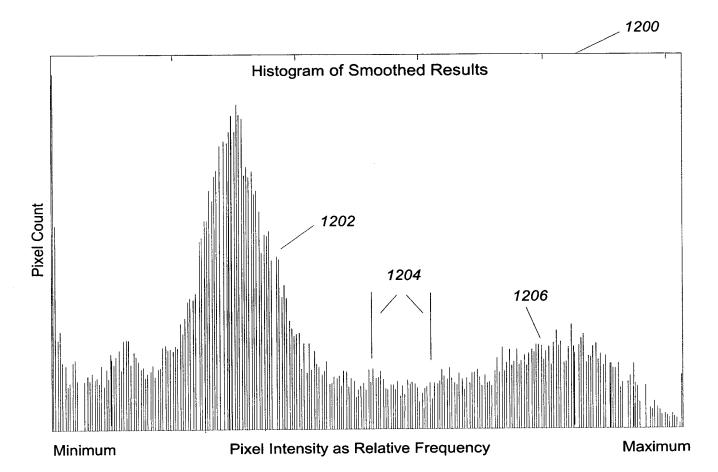


FIG. 12

Applicant: David P. Prince Sheet 15 or U.S.S.N.: 10/734,395 Fig Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste Our Ref. No.: M2010-7114 Fig. 13

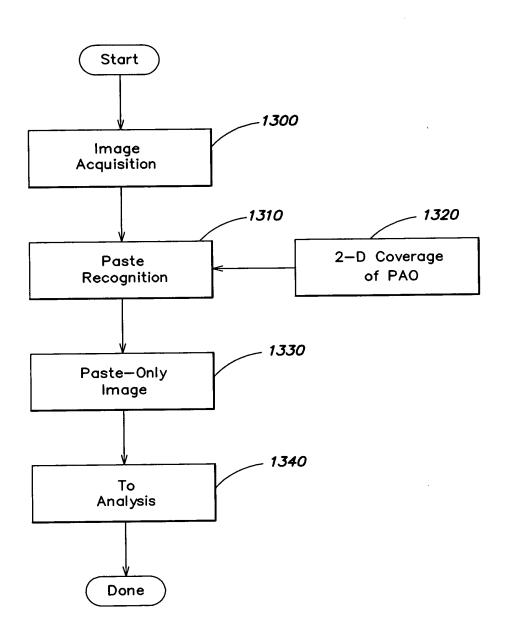
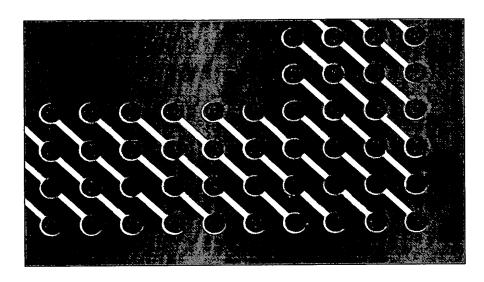


FIG. 13 (Prior Art)

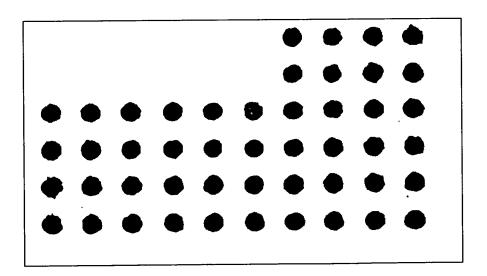
Applicant: David P. Prince
Sheet 16 of 31
U.S.S.N.: 10/734,395
Figs 14 & 15
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste

Our Ref. No.: M2010-7114



Grayscale image of paste using "white" light source.

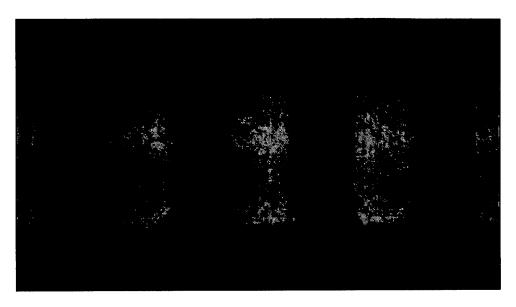
FIG. 14



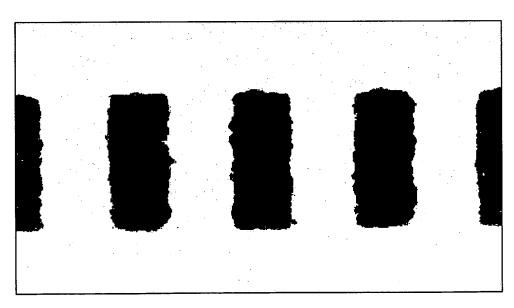
Weighted paste—only image via unique texture—based method.

FIG. 15

Applicant: David P. Prince
U.S.S.N.: 10/734,395
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114



RGB image of UV enhanced Fluorescent paste. FIG. 16



Binary paste-only image from blue channel Via single threshold method.

FIG. 17

Sheet.18 of 31 Fig. 18

Applicant: David P. Prince Sheet. 18 of U.S.S.N.: 10/734,395 Fig. Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste

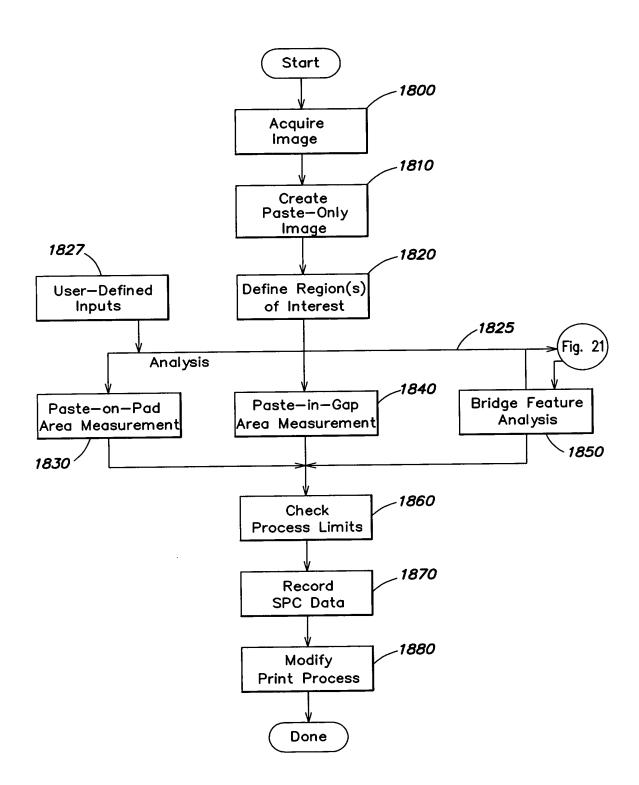
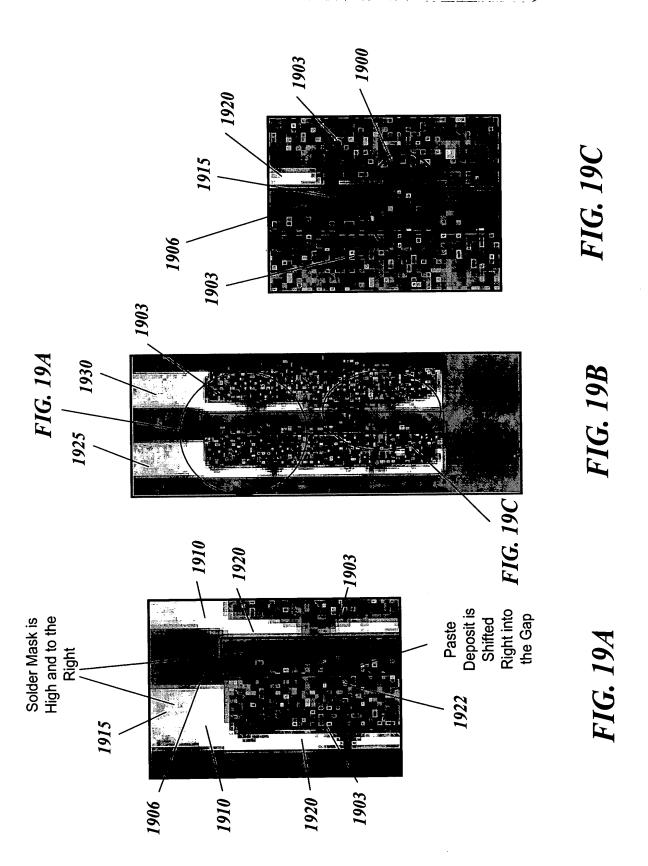
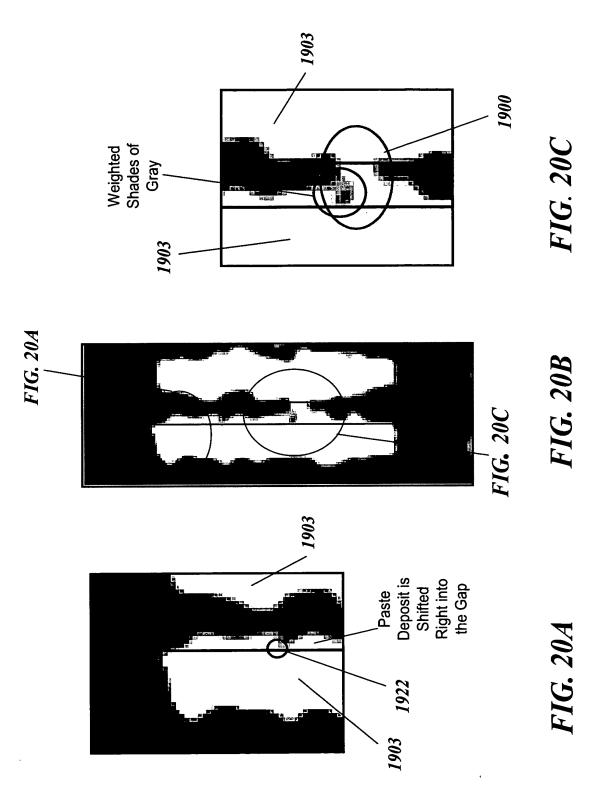


FIG. 18

Applicant: David P. Prince
U.S.S.N.: 10/734,395
Figs 19A, 19B & 19C
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114



Applicant: David P. Prince Sheet 20 of 31 U.S.S.N.: 10/734,395 Figs. 20A, 20B & 20C Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste Our Ref. No.: M2010-7114



Applicant: David P. Prince
Sheet 21 of 31
U.S.S.N.: 10/734,395
Fig. 21
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste

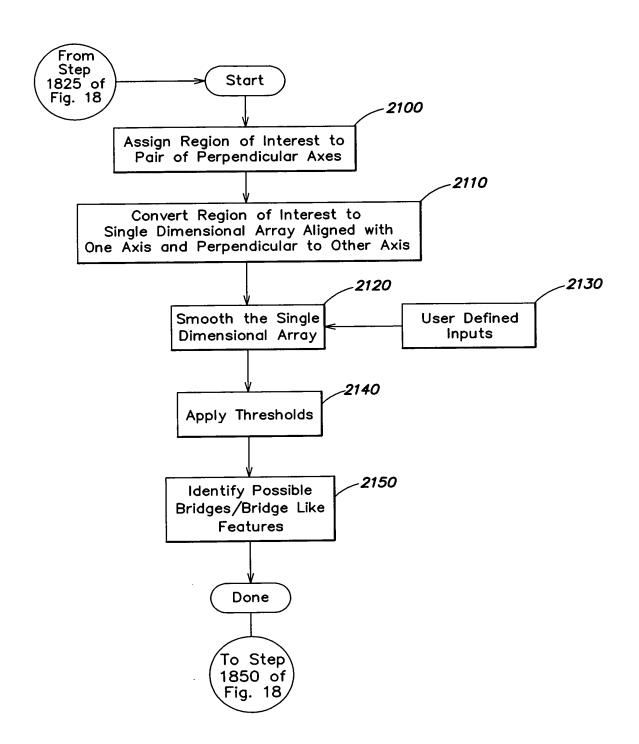


FIG. 21

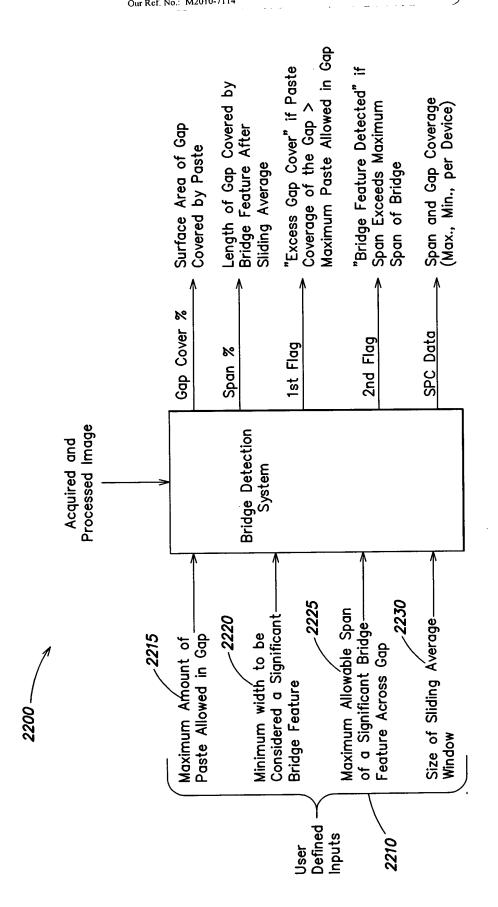


FIG. 22

Applicant: David P. Prince Sheet 23 of 31 U.S.S.N.: 10/734,395 Figs. 23A, 23B & 23C Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste

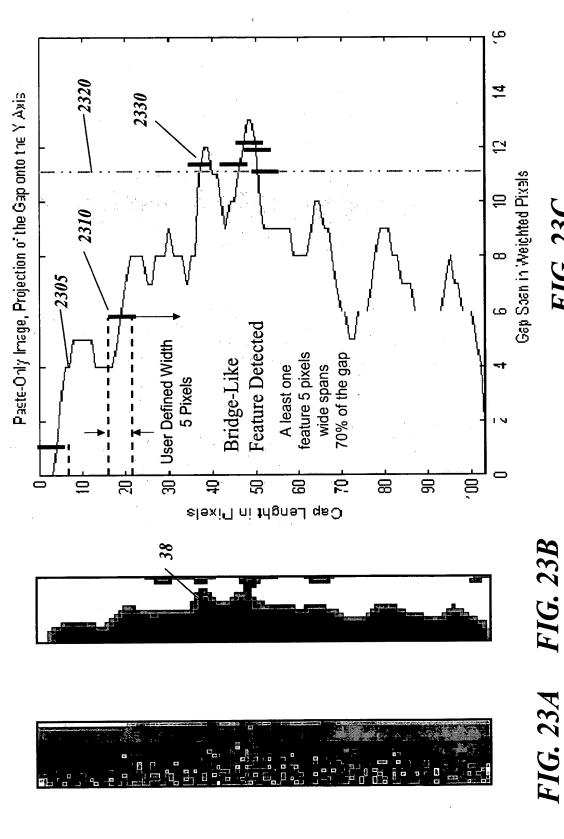
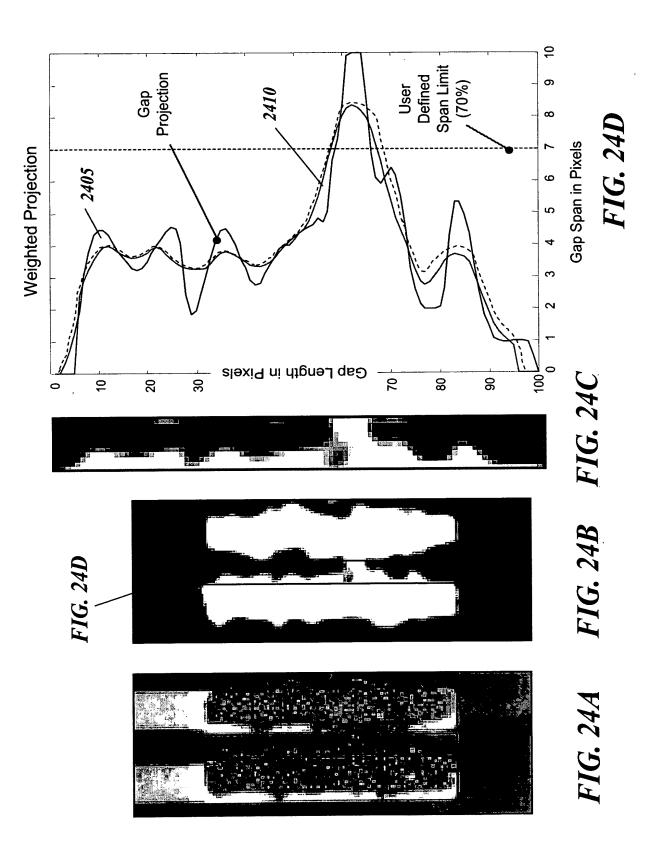
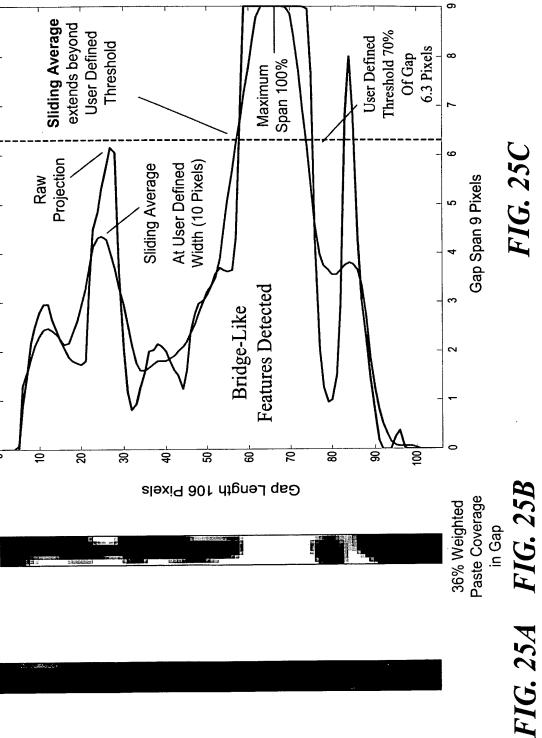


FIG. 23C

Applicant: David P. Prince
Sheet 24 of 31
U.S.S.N.: 10/734,395
Figs. 24A, 24B, 24C & 24D
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste



U.S.S.N.: 10/734,395 Figs. 25A, 25B & 25C Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste Our Ref. No.: M2010-7114



Applicant: David P. Prince
U.S.S.N.: 10/734,395
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114 Sheet 26 of 31 Fig. 26

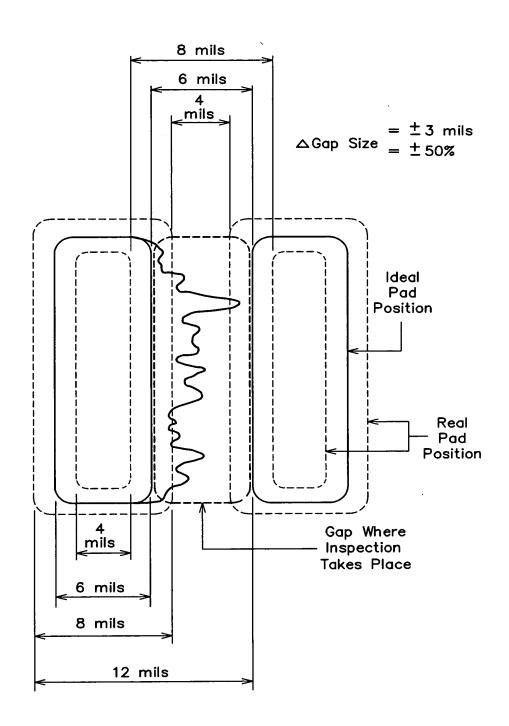


FIG. 26

Sheet 27 of 31 Fig. 27

Applicant: David P. Prince
U.S.S.N.: 10/734,395
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114

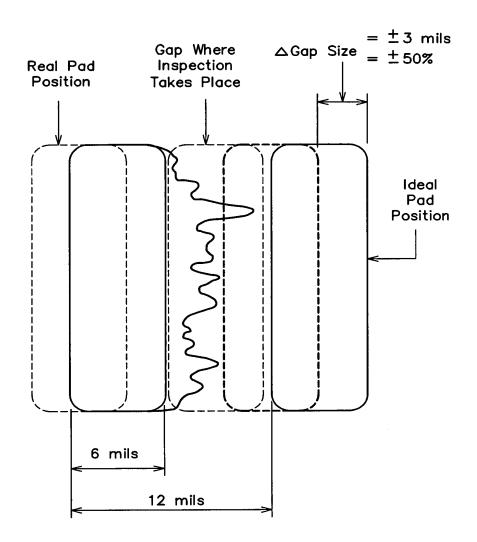
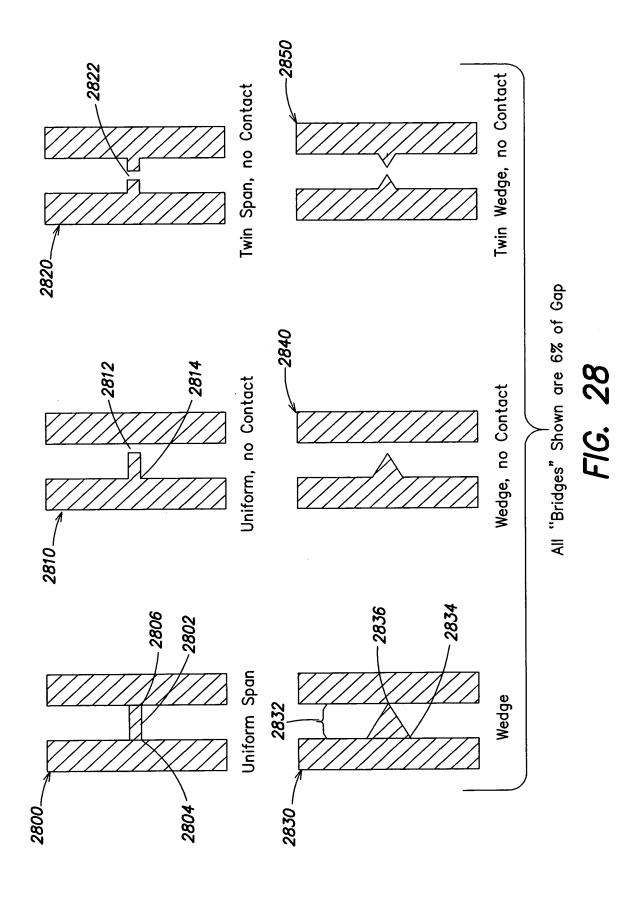
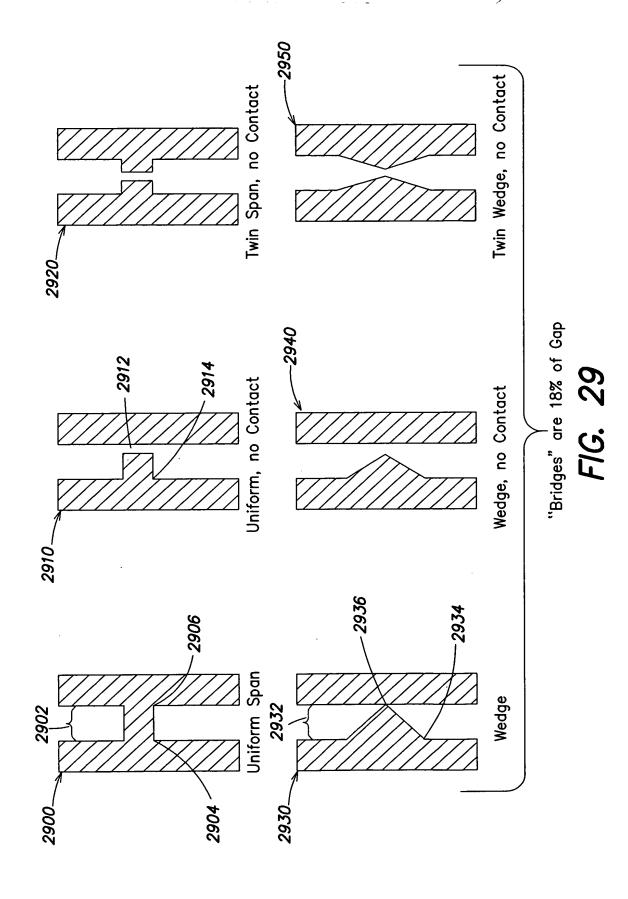


FIG. 27

Applicant: David P. Prince
U.S S.N.: 10/734,395
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114 Sheet 28 of 31 Fig. 28

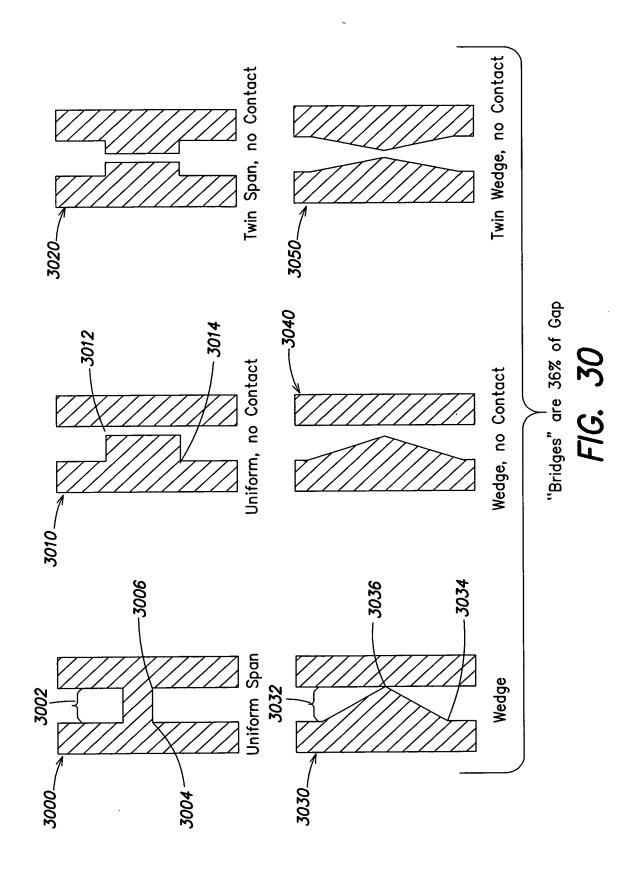


Applicant: David P. Prince
U.S.S.N.: 10/734,395
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114 Sheet 29 of 31 Fig. 29



Sheet 30 of 31 Fig. 30

Applicant: David P. Prince
U.S.S.N.: 10/734,395
Fi
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114



Applicant: David P. Prince
U.S.S.N.: 10/734,395
Entitled: Systems and Methods for Detecting Defects in Printed Solder Paste
Our Ref. No.: M2010-7114

